

NOTES ON SOME CICADAS IN VIRGINIA AND WEST VIRGINIA

BY H. A. ALLARD

On July 10, 1932, the writer climbed to the top of Mary's Rock in Rappahannock County following the trail from Panorama. Near the top, around 3500 feet, a solitary cicada was singing in some dwarfed oak trees and low enough to be within reach. It was carefully approached and caught by a quick grasp of the hand. This diminutive little cicada proved to be *Okanagana rimosa* Say, the identification being made by Mr. Paul Oman, of the U. S. National Museum, and confirmed by Dr. Wm. T. Davis, of Staten Island, N. Y. While its singing was distinctive, unfortunately notes made at the time describing the character of its song cannot now be located.

It may be stated, however, that this cicada has not hitherto been reported from Virginia, although a key to the genera of Virginia cicadas by Wm. T. Davis in his paper "An annotated list of the Cicadas of Virginia with description of a new species" (JOURNAL NEW YORK ENTOMOLOGICAL SOCIETY, Vol. 30, 1922), included the genus *Okanagana*, since he thought it probable that it would be found in the mountains.

The range of *Okanagana rimosa* is one of the widest of all our North American cicadas, extending from Nova Scotia to British Columbia south to New York and Pennsylvania in the east and Nevada in the west.

It is possible that this cicada is not common even in the mountains of Virginia, for the writer has not since heard any song which could be assigned to this species, although large sections of the mountain areas of the Blue Ridge, the Massanutten and the Alleghenies have been traversed at all seasons of the year.

Tibicen robinsoniana Davis

The writer for some years had heard this cicada singing in various localities in Virginia before he was able to secure a speci-

men and establish its identification. As Davis has suggested in his paper, above referred to, the song of this cicada has an Orthopteran character. As a matter of fact the writer on his first acquaintance with its singing believed he had located a group of katydids which he had never heard in song before, and discussed the matter on this basis with the late Mr. A. N. Caudell, of the U. S. National Museum. However, in later years a glimpse of a singer that flew when its song terminated indicated that these puzzling musicians were cicadas.

On August 14, 1937, the writer traversed the high sharp ridge of the Massanutten range which takes its origin from the Fish Hatcheries in Powells Fort Valley and extends southward. The crest of this ridge here separates Shenandoah County from Warren County on the east and has an altitude of about 1800 feet. The cicadas *Tibicen robinsoniana* were singing noisily throughout this area during the hot sunny hours of the day. The next day a trip was made up the steep slopes of the southernmost terminus of Short Mountain in the Massanutten range. This ridge lies just east of the little town of Mount Jackson in Shenandoah County. The day was hot and sunny, and these cicadas were singing in small groups or as solitary individuals throughout the deciduous oak woods covering this slope. They appeared to be especially noisy in the zone between 2000 to 2500 feet here. Until this time the writer had had no success in securing one of these wary cicadas, but on this day on Short Mountain a well-directed throw with a club at a musician singing on an oak limb perhaps 20 to 25 feet from the ground so stunned the creature that it fell fluttering to the ground and was quickly taken. This was identified by Mr. Paul Oman as *Tibicen robinsoniana* a name applied by Mr. Wm. T. Davis in 1922, in the paper previously referred to, from material taken in Nelson County, Virginia. Until this time this species had somehow been overlooked by collectors and taxonomists.

Since its characterization by him as a new species in 1921, *T. robinsoniana* has been taken in Missouri (1923) and in Tennessee (1926).

This interesting cicada appears to be rather generally distrib-

uted in Virginia. It has been reported from Nelson County and Frederick County near Winchester by Mr. Davis. The writer has heard its unmistakable song in colonies near Warrenton, Fauquier County, and at various points in Powells Fort Valley and high up along the steep ridges of the Massanutten range, all in Shenandoah County. This cicada also extends its range westward across the Great Valley into the high Alleghenies of West Virginia, where the writer made an unsuccessful attempt to capture a singer on August 20, 1937, on a small oak tree near the entrance to Gunpowder Cave in the Smokehole country, Pendleton County, at the 2500 foot contour. He is reasonably sure he heard individuals and small colonies singing at several points around Clarendon in Arlington County in June, 1937.

While this cicada cannot be considered common judging from the prevalence of singing colonies and individuals, it is probably rather widely distributed in Virginia; just what its distribution is in West Virginia cannot be told from the single record made by the writer in the mountainous area of Pendleton County.

The writer's observations of this cicada incline to the belief that it is more abundant in or near mountainous territory, or in the higher Piedmont.

A few words may not be amiss concerning its distinctive song, for once heard and fixed in memory it can never be confused with any other cicada song. As Mr. Davis has written, there is something strongly Orthopteran in its quality and delivery. To me it suggests at a distance the lispings notes of some katydid with an intermittent song rather than the song of a cicada. It is in reality a continuous song when heard near at hand, each louder pulsation, the "Zape," "Zape" of Davis, being connected by a series of minor ticks or rasps, so that it can be written as ZAPE z-z-z-z-ZAPE z-z-z-z, continued for several minutes. The minor ticks of its song appear to follow a strong muting of the ZAPE almost to the point of extinction by closure of the opercula brought about by downward movements of the abdomen in the singing of cicadas.

The minor ticks connecting the louder pulsations of the song of *Tibicen robinsoniana* can only be distinguished near at hand. At a distance one hears only the series of major pulsations leading

one to believe that it is a strictly intermittent song like that of some species of *Neocoenocephalus*, when in reality it is not.

Tibicen lyricen var. *engelhardti* Davis

On August 22, 1937, the writer found a dead female of this species on the ground near the entrance to Gunpowder Cave on Cave Mountain, Pendleton County, West Virginia, at about 2500 feet. This appears to be well distributed in the mountain areas of Virginia.